Infectious Disease Epidemiology Report

Legionellosis, 2005

Background

Legionellosis is caused by a type of bacteria called *Legionella*. The bacteria was named in 1976, when many people who went to a Philadelphia convention of the American Legion suffered from an outbreak of this disease. Legionellosis is spread when people breathe in a mist or vapor (small droplets of water in the air) that has been contaminated with the bacteria. One example might be from breathing in the steam from a whirlpool spa that has not been properly cleaned and disinfected.

Maine monitors the incidence of Legionellosis through mandatory reporting by health care providers, clinical laboratories and other public health partners. This report summarizes surveillance data on Legionellosis from 2005.

Methods

Legionellosis is associated with two clinically and epidemiologically distinct illnesses: Legionnaires' disease, which is characterized by fever, myalgia, cough, and clinical or radiographic pneumonia; and Pontiac fever, a milder illness without pneumonia.

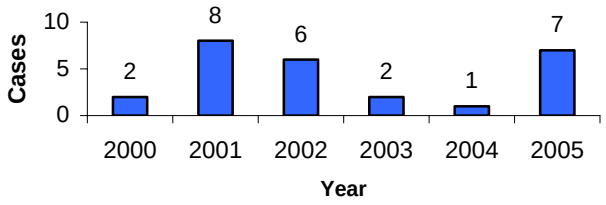
A confirmed case of Legionellosis is defined as a clinically compatible case that is confirmed by culture isolation, urine antigen detection, or a four-fold increase in specific serum antibody titer to *Legionella pneumophila* serogroup 1. A suspected case of Legionellosis is defined as a clinically compatible case with a fourfold or greater rise in antibody titer to species or serogroups of *Legionella* other than *L. pneumophila* serogroup 1 or detection of *Legionella* by direct fluorescent antibody (DFA) staining, immunohistochemistry, or a validated nucleic acid assay.

Standardized case report forms were completed for each reported case to collect information on demographic characteristics, clinical syndrome, and outcome of illness. Disease rates were calculated using U.S. Bureau of Census Maine population counts for 2000.

Results

A total of 6 confirmed cases and 1 suspected case of Legionellosis were reported in 2005. The rate of Legionellosis in Maine was 0.5 cases per 100,000 population.

Legionellosis by Year -- Maine, 2000-2005



Five cases (71%) were females. All 7 cases were White, Non-Hispanic. The median age of cases was 55 years (range 42-80 years). Legionellosis cases in 2005 were similar in demographics to cases reported in previous years (Table).

Table: Legionellosis by select demographics – Maine, 2000-2005*

Characteristic	Count	Percent
Season		
Winter	5	20
Spring	3	12
Summer	8	32
Fall	9	36
Sex		
Male	12	48
Female	13	52
Age		
40-44	4	16
45-49	6	24
50-54	3	12
55-59	5	20
60-64	2	8
65-69	1	4
70-74	1	4
75-79	1	4
80-84	2	8

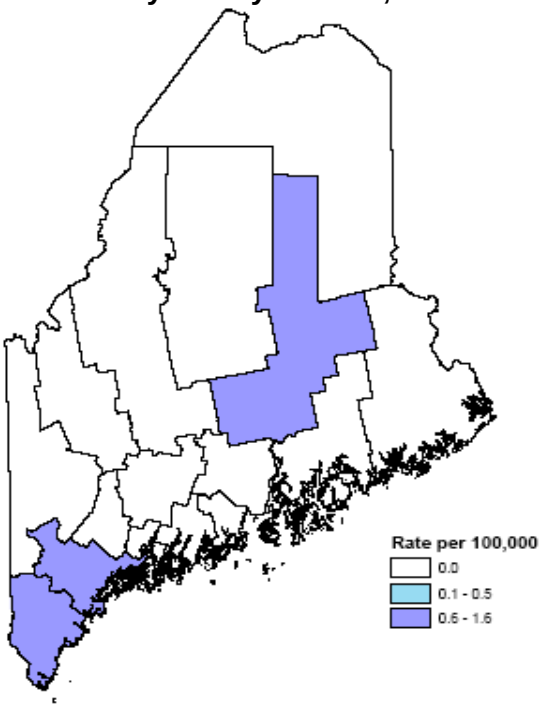
* 1 case with unknown demographics excluded

The clinical diagnosis for all 7 cases was Legionnaires' disease. All cases were hospitalized as a result of their infection and all recovered. Laboratory findings classified 5 cases as *L.*

pneumophila serogroup 1, 1 case as *L. pneumophila* serogroup unknown, and 1 case as *L. micadadi*. The median time from symptom onset to laboratory diagnosis was 9 days (range 2-15 days) and from diagnosis to health department notification was 5 days (range 0-59 days).

Six (86%) of the 7 Legionellosis cases reported no overnight travel during the two weeks before onset of symptoms. One case reported having received recent dental work, and another reported a recent overnight hospital stay. All cases were considered sporadic and were unrelated to each other or other cases of Legionellosis in the U.S.

Legionellosis by county – Maine, 2005



Discussion

Sporadic cases of Legionellosis occur in Maine each year. However, only 2%-10% of estimated cases are reported. Reasons for underreporting could include poor recognition by clinicians of Legionellosis as a cause of pneumonia, lack of routine diagnostic testing, lack of awareness of the utility of urine antigen test, and a lack of reporting to public health departments.

For patients for whom Legionellosis is a possible diagnosis and for all patients with nosocomial pneumonia, urine antigen testing and culture of appropriate respiratory secretions should be performed. Performing the urine antigen test allows for rapid diagnosis of *L. pneumophila* serogroup 1 infections, followed by culture results to diagnose infection with other *Legionellae*.

Given that empiric use of fluoroquinolones and extended-spectrum macrolides is successful in treating patients with community-acquired pneumonia, cost considerations may limit the use of urine antigen and culture to diagnose Legionellosis. Consideration must be given to the public health implication of not diagnosing Legionellosis, including the continued presence of a disease-transmission source in the hospital or community.

If hospital laboratories are unable to perform culture isolation of Legionella species, the Maine Health and Environmental Testing Laboratory can perform this test to identify Legionella species; prior notification is requested. Providers are requested to report cases of Legionellosis within 48 hours of recognition or strong suspicion by calling 1-800-821-5821.

References

1. Centers for Disease Control and Prevention. Legionellosis: legionnaire's Disease and Pontiac Fever website (www.cdc.gov/ncidod/dbmd/diseaseinfo/legionellosis_g.htm) Accessed September 7, 2006
2. Benin AL, Benson RF, Besser RE. Trends in Legionnaires Disease: Declining Mortality and New Patterns of Diagnosis. *Chronic Infectious Disease* 2002:35;1039-1046.

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